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Fig: 1.



Philosoph, Tr
Number,

Fig: 2.



Fig: 3.



Fig: 4.



Fig: 5.

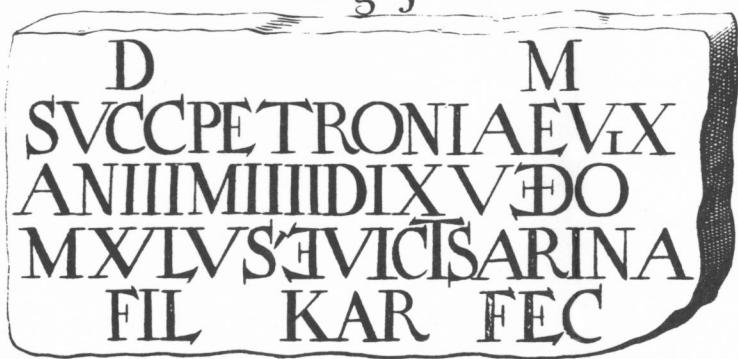


Fig: 6.



Opus, Transact,
Number 155,

Fig. 6.

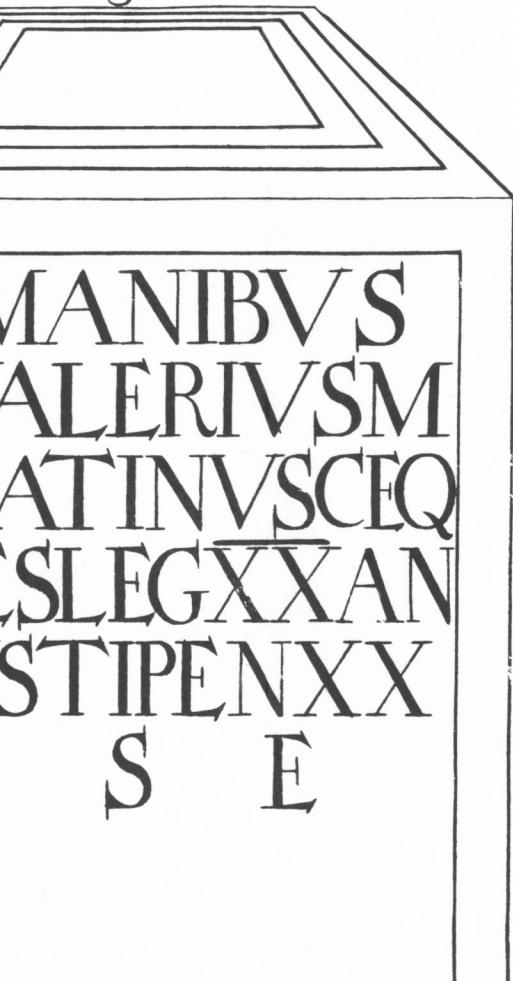


Fig. 5.

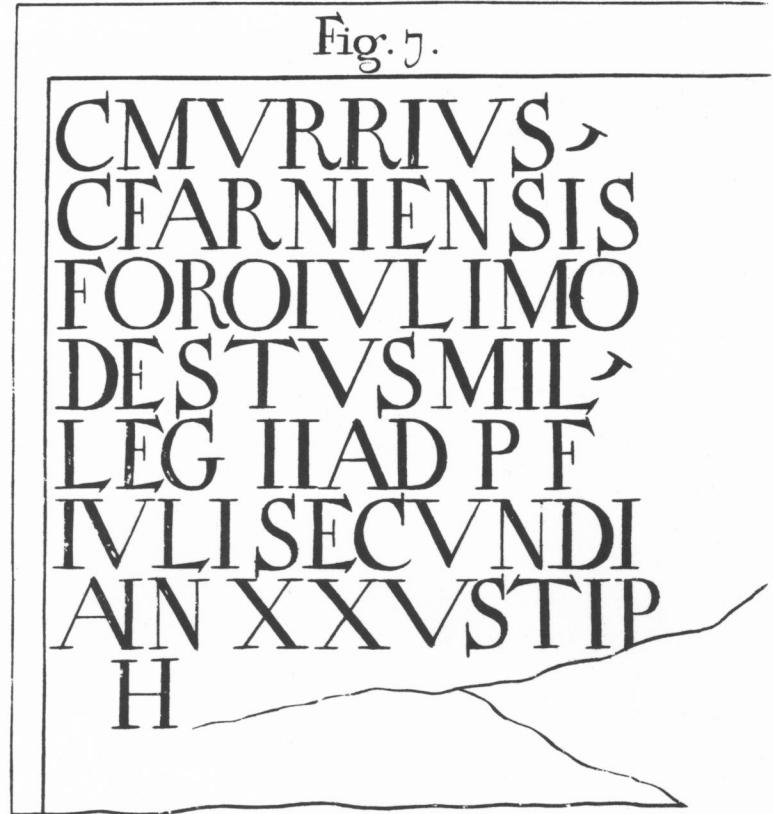
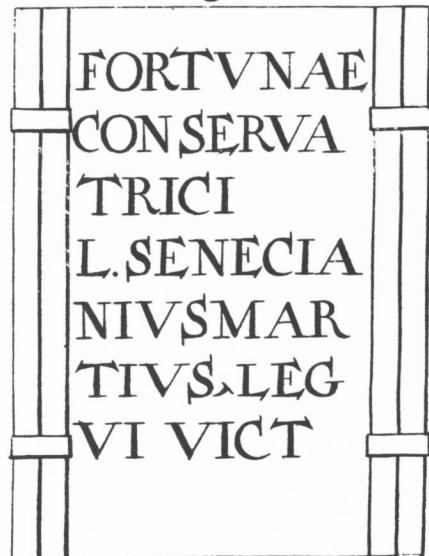


Fig. 8.



MB. sculp.

A Letter in answer to another of Mr. Hen. Oldenburgh's, wherein he desired an Expianation of a Paragraph, touching the use of the Intestinum Cæcum, publisc in the Philosoh. Transact. Num. 95 Anno 1673. whic: Paragraph is this.

The use of the *Intestinum Cæcum*, subservient to that of the *Colon* and *Rectum*; manifest in such Animals, where Nature intends a certain and determinate Figure to the Excrements.

Sir,

I did not think of Explaining my Sense of the use of the *Cæcum* until I had had the leisure and opportunity of purposely examining the Intestines of most kinds of Animals. But because I am much mistaken by the Person, who as you tell me, is desirous to be *anonymous* to me, him I mean who raised the Scruples you sent me, upon the second Paragraph, which says the use of the *Intestinum Cæcum* to be subservient, &c. I shall be forc'd to tell you, what I presume may prove as near the truth, as any one of the many Conjectures extant in Authors, about the unknown use of this Part.

I understand by determinate Figure. 1. The Excrements divided into many small parts of a like shape, such as Sheep, Deer, Conies, Hares, Rats, Mice, Horses, Caterpillers, some Snails, &c. do naturally void. 2. In a greater latitude, I oppose figured Excrements to liquid, as *C. Celsus* in some place doth: Thus the Dung of Pigeons, Geese, and Men, Cats, Dogs, &c. may be said to be figured. Now the *Cæcum* in my Opinion is subservient in some measure to the figuration of both, but most manifest in the first kind. My meaning is, that probably the use of the *Cæcum* is to keep the Excrements, which shall pass into its Cavity (and I believe all, or most part of them do so in sound Animals) so long, until they are sufficiently drained, baked, hardned, or of a due consistence (as Clay is tempered for the mould) to receive the Figure to be given it from the *Colon* and *Rectum*. This use I say of the *Cæcum*, seems to me to be much more manifest in such Animals, as have figured Excrements of the first kind. In Rats for example, whose Excrements are constantly alike figured, the *Cæcum* is very large, more capacious than the Stomach it self. But its use in receiving the Excrements or exhausted Chyle, is not more apparent, from its large Capacity, than that other of farther drawing and tempering them to a stiness, for the service of the *Colon*, from the admirable con-

trivance and structure of this latter Gut, which is a *Phænomenon* that deserves further Consideration: it is I say to be noted, that immediately under the valve of that Gut, in this Animal, are certain spiral Fibers, which make a kind of screw: now it seems to me, that the Excrements, after they are brought to a due Consistency by the necessary stay they make in the *Cæcum*, and being carried out thence into the spiral foldings, or screw of the *Colon*, cannot descend in a perpendicular, as formerly through the small Guts, but still gently glide, and that very leisurely by the winding of the screw; whence arises the Figure.

And I am apt to believe, that if the *Cæcum* of a Rat, or any of the first kind of Animals mentioned, was tyed up, or otherwise hindred from its receipt, the Animals would unavoidably fall into a *Diarrhoea*: there being I say no reason, that I can foresee, why the yet liquid Excrements or exhausted Chyle, such as we constantly find it, even at the very bottom of the small Gut, should stop at the entrance of the *Colon*, and not speedily glide through the screw, in a down-right descent, that is, elude the devise of Nature, and make the configuration of that so curiously contrived part useless; we, I say, supposing the experiment to have taken away the necessary *Diverticulum* and Repository of the unprepared Excrements, in tying up the *Cæcum*.

I know not whether the Observation will hold good in general Terms, because I say I have not yet purposely examined divers Animals in Nature, *viz.* That where ever there are elegantly figur'd Excrements of the first kind, there is ever a capacious *Cæcum*; and on the contrary the less accurately figured and more liquid the Excrements of any Animals are, the lesser the *Cæcum*, or none at all. This is certainly true, that some Animals, which are naturally loose, have no *Cæcum* at all, or very little as the *Talpa*, the *Echinus terrestris*, the *Gulo*, and amongst Birds the Wood-pecker kind, the Hawke kind, &c.

We shall not trouble you at present with our observations concerning Figure of Excrements in the divers Species of Animals already by us examined; nor of the place of their being so figured. Also we shall pass by at present our thoughts of the manner of the *Cæcum's* reception, and preparing the Excrements for the *Colon*.

We likewise forbear to offer some doubts we have, concerning Natures end, in the necessary Figuration of the Excrements

crements in some Animals, as first to prevent Diarrhæa's; secondly to abide Hunger the better; Thus snails in the Winter rest with full Intestines: Thirdly and chiefly to heighten the fermentation and digestion, (of which I shall shortly publish my thoughts in another Tract) in the Stomach and small Guts. Also in like manner, why to some Animals liquidity of Excrements is as necessary.

What we have hastily writ at present, being only intended, for the better understanding that Paragraph, and not all, that this Subject would incite me to say, &c.

Thus far have I sent you of that Letter; the remainder I will shew you, when I shall see you here.

Westminster,
Nov. 6. 1683.

SIR,

Your most humble Servant,

M. Lyster.

The learned *Author* of the preceding *Discourse* visiting the *Bath* the last Summer, *Anno 1683.* exactly designed the *Roman Inscriptions* prefixt to this *Transact.* according to the *Originals* now to be seen at *Bath* in *Somersetshire*, formerly published in *Camden*, and since by *Guidot*, which he did to shew how unlike the *Originals* are, to the Letters of the *Pres*; and that therefore to represent them well and faithfully, they ought first to be carefully designed and then Engraved. Which is here faithfully done.

The Letters of Fig. 2, 3, 4. are graven larger than the rest, because they are five Inches complete. Fig. the 8th. contains the Inscription of an *Altar* found near the *Roman Camp*, which is placed within the *Angle*, where the two *Rivers*, *Medloe* and *Erwin* meet, a little mile South-west of *Manchester* in *Lancashire*, and preserved in the Garden of the worshipfull *Edward Melford de Holme Armiger*, where the same worthy Person saw it, and read it.